

Title (en)

APPARATUS AND ITS USE FOR THE MANUFACTURE AND TREATMENT OF EUTECTIC AND EUTECTOID COMPOSITES

Publication

EP 0034995 B1 19841010 (FR)

Application

EP 81420024 A 19810225

Priority

FR 8004496 A 19800226

Abstract (en)

[origin: US4372781A] A process and apparatus for preparing anisotropic metallic and ceramic compositions or material includes floating zone melting of eutectics and orientation of eutectoids, as well as melting, frittering, or homogenization of the eutectoids prior to orientation. The process includes solidification of a eutectic in the presence of a thermal gradient while displacing the solidification front of the eutectic along the direction of the gradient and orienting the solid eutectoid which results by imposing a direction of growth on it by displacement of the composition itself or the temperature gradient. The eutectoids are then prepared in a reactive atmosphere within a container and the surface thereof treated in gaseous atmosphere, after which the materials are compacted by displacing them again. The apparatus for performing the process includes a double heating and cooling system and structure for translating and rotating these systems. It additionally includes a support plate for supporting the elements being oriented, the plate being attached to a displacement shaft. Electronic controls for all of the structures are connected to temperature and displacement sensors.

IPC 1-7

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IPC 8 full level

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CPC (source: EP US)

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Cited by

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